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Handling of Regulated Ash Material from an Emerald Ash Borer Quarantined Area

Frequently asked questions about Emerald Ash Borer Compliance Agreements and the Handling of EAB regulated materials:

Q. What is a Compliance Agreement?

A. A Compliance Agreement is a document that describes how a company will properly treat regulated articles to mitigate the spread of EAB and adhere to the quarantine law. A USDA APHIS or CDA representative is available to discuss Compliance Agreements in more detail at the request of any business or other entity involved in moving regulated articles. USDA APHIS or CDA can provide training on EAB and also help determine how any business can lower the risk of spreading EAB with the least amount of disruption to business practices.

Q. Do I need a Compliance Agreement?

A. If you are moving regulated articles (e.g., ash material or hardwood firewood) out of a quarantine area you will need a Compliance Agreement. Ash material that originates from a non-quarantine county and transits the quarantine may require a Compliance Agreement, and it is recommended you contact CDA for further information.

Q. How do I get a Compliance Agreement?

A. You can contact CDA at 303-239-4152, or e-mail Cheryl Vestal at Cheryl.vestal@state.co.us. CDA official will work with you to determine which Compliance Agreements, if any, are needed, explain the requirements, and work with you to implement any needed quarantine restrictions.

Q. Why is all hardwood firewood regulated instead of only ash firewood?

A. Once a log has been cut and split, it is extremely difficult to identify ash wood from other hardwood species. While this is especially true for the casual firewood user and homeowners, the experience of other EAB regulatory agencies across the nation have shown that the same has often applied to firewood businesses, too. Therefore, due to the potential risk associated with moving EAB-infested firewood, all hardwood firewood is regulated. There are no EAB quarantine restrictions on coniferous species of firewood, such as pine, spruce and fir.

- Q. Does the quarantine affect movement of hardwood (non-ash) nursery stock or hardwood (non-ash) wood products?
- A. In regards to EAB there are no restrictions on the intrastate movement of non-ash hardwood products such as nursery stock, logs, branches, green lumber or chips in Colorado. However, the movement of all hardwood firewood out of the quarantined county is regulated.

Q. Does the quarantine affect the movement of material within the quarantine areas?

A. There are no legal restrictions for the movement of regulated materials within the quarantine.

Q. What can I do with my ash material from a quarantined county?

A. There are multiple options available: see 'Handling of Regulated Ash Materials' handout

Ash material can be brought to a disposal site within the quarantine. Material can be utilized within the quarantine for any legal purpose.

If removing ash material or other regulated articles from the quarantine, the following options on 'Handling of Regulated Ash Materials' Compliance Agreements tables may be used but require a Compliance Agreement with CDA and / or USDA. We advise that this Compliance Agreement be in place before beginning processing operations.

Q. If I sign a Compliance Agreement, will I be required to keep records?

A. Yes. If your company ships regulated articles under a compliance agreement or with USDA APHIS or CDA certification, you will need to maintain those shipping and/or certification records for 36 months, unless otherwise specified.

Q. Do I have to keep records of shipments or treatments that do not involve regulated articles?

A. CDA does not require records for treatment or shipment of non-regulated articles.

Q. Can I bring firewood from a non-quarantined area into a quarantined area?

A. There are no legal restrictions on firewood that originates from a non-quarantined county. At this time only Boulder County is quarantined. Firewood is allowed to come into Boulder County from a non-quarantined county. Once the firewood enters into a quarantined area, it becomes a regulated article.

Q. If I have further questions about EAB or compliance agreements, or if I think I have found EAB, who do I contact?

A. For more EAB info: colorado.gov/ag/dpi or CAPS program manager John Kaltenbach-1-888-248-5535; caps.program@state.co.us

Compliance agreements- Cheryl Vestal-303-239-4152; cheryl.vestal@state.co.us

Compliance agreements are NOT required when:

- Ash wood products (logs, lumber, chips, and hardwood firewood) are moved within the Colorado Emerald Ash Borer Quarantine Area.
- The handling of ash wood products is completed outside the quarantine area (i.e. cutting, hauling, milling, etc.).
- Ash materials are moved from a non-quarantined area outside of the quarantined area to inside of the quarantine area.

The following procedures and schedules must be followed in order to meet USDA APHIS and the Colorado Department of Agriculture requirements. Treatment methods become important when applying for certificates or when receiving ash materials from an EAB quarantined area. These treatment schedules, if required, will be written into your compliance agreement.

Compliance Agreements will be needed for the following Handling and Treatment of Regulated Ash Materials:

Regulated Article	Mitigation and Treatment Measures
Firewood of all hardwood species	<ul style="list-style-type: none">• Remove bark and an additional ½ inch of Wood1: wane-free(no edges corners with bark)• Kiln sterilization treatment (T404-b-4)• Heat treatment (T314-a) in a heat treatment facility approved by APHIS• Fumigate according to treatment schedule T404-b-1-1 (Methyl bromide fumigation at NAP-tarpaulin or chamber)• Apply an APHIS approved method²
Chips and Mulch of all hardwood species	<ul style="list-style-type: none">• Chip or mulch to < 1" in at least two dimensions- may move w/ compliance agreement Chip or mulch to > 1" cannot be moved w/o treatment• Follow an APHIS approved mulching or composting protocol• Apply an APHIS approved method².
Nursery Stock of Fraxinus spp. itself	No treatment available. Nursery stock cannot be moved from a quarantined area.

Green lumber of Fraxinus spp. itself	<ul style="list-style-type: none"> • Remove bark and an additional ½ inch of Wood1: wane-free(no edges corners with bark) • Kiln sterilization treatment (T404-b-4) • Fumigate according to treatment schedule (404-b-1-1 (Methyl bromide fumigation at NAP-tarpaulin or chamber) • Apply an APHIS approved method²
Logs and lumber of Fraxinus spp. itself	<ul style="list-style-type: none"> • Remove bark and an additional ½ inch of Wood1: wane-free(no edges corners with bark) • Kiln drying treatment (T404-b-4) • Heat treatment (T314-a) in a heat treatment facility approved by APHIS • Fumigate according to treatment schedule T404-b-1-1 (Methyl bromide fumigation at NAP-tarpaulin or chamber) • Apply an APHIS approved method²
Other material including wood waste, living, dead, cut or falling including stumps, roots, branches of Fraxinus spp.	<ul style="list-style-type: none"> • Chip or mulch to less than one inch in at least two dimensions • Apply an APHIS approved method²
WPM containing regulated green lumber, including but not limited to, dunnage, crating, pallets, packing blocks, drums, cases, and skids.	<ul style="list-style-type: none"> • ISPM accredited treatments • Treatment/mitigations for green lumber of Fraxinus spp. itself as listed above • Apply an APHIS approved method²
<p>¹ The bark and wood removed will be regulated separately. If intended for interstate movement the removed bark and wood must be treated as described in Table 1 for chips and mulch. If produced at a mill located outside the quarantine area but approved to handle green ash logs or lumber from within the quarantine area, wood waste must be treated or destroyed prior to adult flight season.</p> <p>² Consult a local USDA APHIS Official at 303-371-3355 or Cheryl Vestal-303-2239-4152; cheryl.vestal@state.co.us</p> <p>Detailed specifications for treatments can be found in the current edition of the PPQ Treatment Manual online at: http://www.aphis.usda.gov/import_export/plants/manuals/ports/treatment.shtml</p>	



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Approved Treatments for Handling Regulated Ash Materials

Composting Requirements for Ash Material from an Emerald Ash Borer Quarantined Area

This protocol is used to treat hardwood and bark chips, nuggets, and mulch material that are larger than 1.00 inch (2.54 cm) in any dimension.

Compost using the following procedure:

- 1) Compost piles must be a minimum of 200 cubic yards.
- 2) Internal temperature at a depth of 18 inches must reach 140 degrees F (60 degrees C) for four consecutive days.
- 3) Using a front end loader or a bulldozer, remove the outer layer of the compost pile to a depth of three feet.
- 4) Start a second compost pile using the recently removed cover material as a core.
- 5) Move the core material from the first compost pile and place on the second compost pile as a cover at least three feet deep.
- 6) Allow the second compost pile to remain undisturbed until the temperature reaches 140 degrees F (60 degrees C for at least four continuous days.)
- 7) Remove the second compost pile and use as fully composted material.

This procedure will allow continuous operation. After the first compost pile is “turned” to become the second compost pile, a new “first” compost pile can be started.

Material that meets these criteria may be moved outside of a quarantined area with a compliance agreement.

Mulch Sampling Protocol

Size Requirements and Screening Procedure for Hardwood Mulch and Chips in the Emerald Ash Borer Quarantine Area

The following procedure should be followed to determine if hardwood and bark chips, nuggets, and mulch materials can be considered safe for movement from the emerald ash borer quarantine area:

- Step 1. Using a 12 inch diameter 3.25 inch deep sieve with 1.25 inch steel mesh openings (Fisher Scientific #04-884-1J) take 10 samples from random locations in the chip or mulch pile - - do not take all samples from the same location. If any chips are found that are greater than 2.5 inches in two dimensions the pile is rejected. If there are no chips found greater than 2.5 inches in two dimensions then proceed to Step 2.
- Step 2. If four or more chips from the 10 samples do not pass through the sieve proceed to Step 3. If three or fewer chips from the 10 samples do not pass through the sieve, then the pile passes and can be moved.
- Step 3. Resample. Take 10 additional samples from random locations in the chip pile. If any chips are found that are greater than 2.5 inches in two dimensions the pile is rejected. If there are no chips found greater than 2.5 inches then proceed to Step 4.
- Step 4. If four or more chips from the 10 samples do not pass through/put through the sieve the pile is rejected. If three or fewer chips fail to pass through the sieve then the pile passes and can be moved.

Note: Mulch chips that do not meet the specified requirements as outlined above may be reground to meet this specification of 1 inch in two dimensions or alternatively composted.

Kiln Sterilization Treatment Schedule (Used primarily for treating green lumber)

Treatment: T404-b-4 Kiln Sterilization

Note: When using this treatment method for interstate movement (i.e. moving ash wood products from the Colorado quarantine area to another state) the process will need to be certified by UDDA APHIS PPQ personnel. This should be done before the first treatment; otherwise the process will have to be repeated after being certified.

Dry Bulb Temperatures	Wet Bulb Temperatures	Relative Humidity	Moisture Content	Thickness of Lumber	Exposure Time
140° F	7° F	82%	13.8%	1 inch	3 hours
				2 inches	5 hours
				3 inches	7 hours
130° F	16° F	60%	9.4%	1 inch	10 hours
				2 inches	12 hours
				3 inches	14 hours

- 1) After kiln drying, the wood will be checked with a moisture meter to verify the wood is at or below the appropriate moisture content listed above. Two readings will be taken per stack of wood: one near the top of the stack and one near the bottom of the stack. These reading will be recorded in a computer database along with the date and time. This database information will be supplied to USDA, APHIS, PPQ on a monthly basis.
- 2) If the wood does not meet moisture content guidelines, it will NOT be in compliance unless it undergoes additional kiln drying and can then demonstrate that the moisture requirement has been met.

Fumigation Treatment Schedule
(Used primarily for treating veneer logs)

Treatment: T404-b-1-1 MB at NAP-tarpaulin or chamber

Temperature	Dosage Rate (lb./1,000 ft ³)	Minimum Concentration Readings (ounces) At:			
		0.5 hour	2 hours	4 hours	16 hours
70° F or above	3 pounds	36	30	27	25
40-69° F	5 pounds	60	51	46	42

Heat Treatment Schedule
(Used for treating firewood for EAB)

Treatment: T314-a Heat treatment

Note: When using this treatment method for intrastate or interstate movement the process will need to be certified by USDA APHIS or Colorado Department of Agriculture personnel. This should be done before the first treatment; otherwise the process will have to be repeated after being certified.

- 1) Heat treatment procedures may employ steam, hot water, kilns, or any other method that raises the temperature of the center of the wood to at least 140°F (60°C) and maintains the center temperature for at least 60 minutes.
- 2) Facilities, temperature monitors and temperature sensors will be approved by CPHST (Center for Plant Health and Science Technology) prior to a compliance agreement being initiated.
- 3) Compliance agreements must contain a diagram of the treatment facility to include at a minimum: dimensions, capacity, circulation fans, heat input location, and door locations.
- 4) The temperature monitoring equipment (thermocouples, temperature data loggers etc.) must be accurate to within +/- 0.5 °C (0.9 °F) at the treatment temperature, capable of collecting temperature data at least once every five (5) minutes and recording or storing data for 30 days. The temperature monitoring equipment must also be calibrated (by a source that can provide accreditation such as NIST) prior to facility certification tests and a minimum of once an annually thereafter. In addition, if a permanent temperature recording system is used, the system must be recalibrated when any part or portion of the system is repaired or replaced.
- 5) Temperature monitoring equipment must be able to provide a record of the treatment that identifies each sensor and indicates time and temperature.
- 6) Internal wood temperatures shall be obtained and verified by sensors located in the larger pieces of firewood at representative locations within the stack. The number of temperature sensing elements required per load will vary with the size of the load. The minimum requirement is four (4) sensors – one (1) for measuring air temperature and three (3) for

measuring internal wood temperature. For loads greater than 5,000 ft³ (142 m³) of wood, a minimum of one additional sensor for measuring internal wood temperature must be provided for each additional 2,000 ft³. For example, a load of 9,000 ft³ would require a total of six (6) sensors (one ambient air temperature sensor and five [3 + 2 additional sensors]). At least one sensor shall be placed in a large firewood piece in a portion of the load furthest away from initial heat circulation. Sensors will be placed in the wood in pre-drilled holes to measure core wood temperature. Probes are to be sealed into each hole with putty (electricians putty is recommended) to prevent reading ambient air temperature. Other recording arrangements may be considered if approved by CPHST.

- 7) Begin treatment when all the temperature sensors reach the threshold temperature of 140°F (60° C). Treatment will be complete when all temperature probe readings are at or above the threshold temperature for the entire 60 minutes.
- 8) Temperature equipment will be certified by USDA APHIS personnel at regular intervals (suggested monthly) except in those cases where a facility is inactive in excess of 2 months. Certification will occur before production activities resume.